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# Interactive Displays on Environmental Stewardship for General Agricultural Audiences

Leslie J. Johnson and Charles A. Shapiro, University of Nebraska - Lincoln



UNIVERSITY OF  
**Nebraska**  
Lincoln | EXTENSION

Nebraska's beef industry thrives by its stewardship.

IANR research focused on animal welfare & resource management.

## Calf sickness virtually eliminated.

**Sandhills Calving System**  
addresses scourge of calf scours.

- Focusing on the disease cycle led to innovative solution
- Segregation of calves by age prevents transfer of pathogens
- Multiple pastures, each with calves within one week of age of each other
- Calves commingled after youngest is four weeks of age
- Results in less labor, fewer drugs and more calves to sell



**Clean calving areas:** Keeping newborn calves away from pathogen-shedding older calves is the key to success of the Sandhills Calving System.

**Fly control is important during heat stress:** 3 female stable flies feeding 5 minutes per day will decrease daily gain by 5%!



Helping cattle  
keep their cool.

As temperatures rise,  
performance suffers.

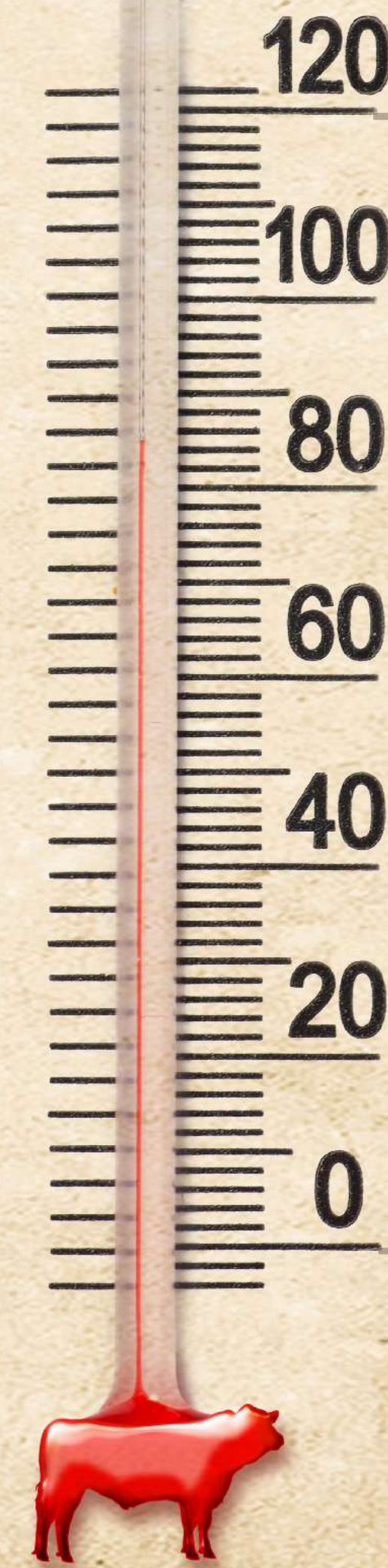
“Shirtsleeve” temperature  
for cattle is 55 degrees

Rumen acts as an internal furnace

At 82 degrees,  
metabolism changes

Gain efficiency decreases  
as cattle devote energy  
to “maintenance”

Temperature heat index  
of 85 kills—even at night!



## Managing heat stress in cattle

**Air movement:** 5-10 mph helps lower body temperature

**Water:** Under heat stress, cattle need twice as much drinking water. Provide adequate flow rate & water trough size.

**Shade:** Properly designed, shade improves cattle performance and saves lives.

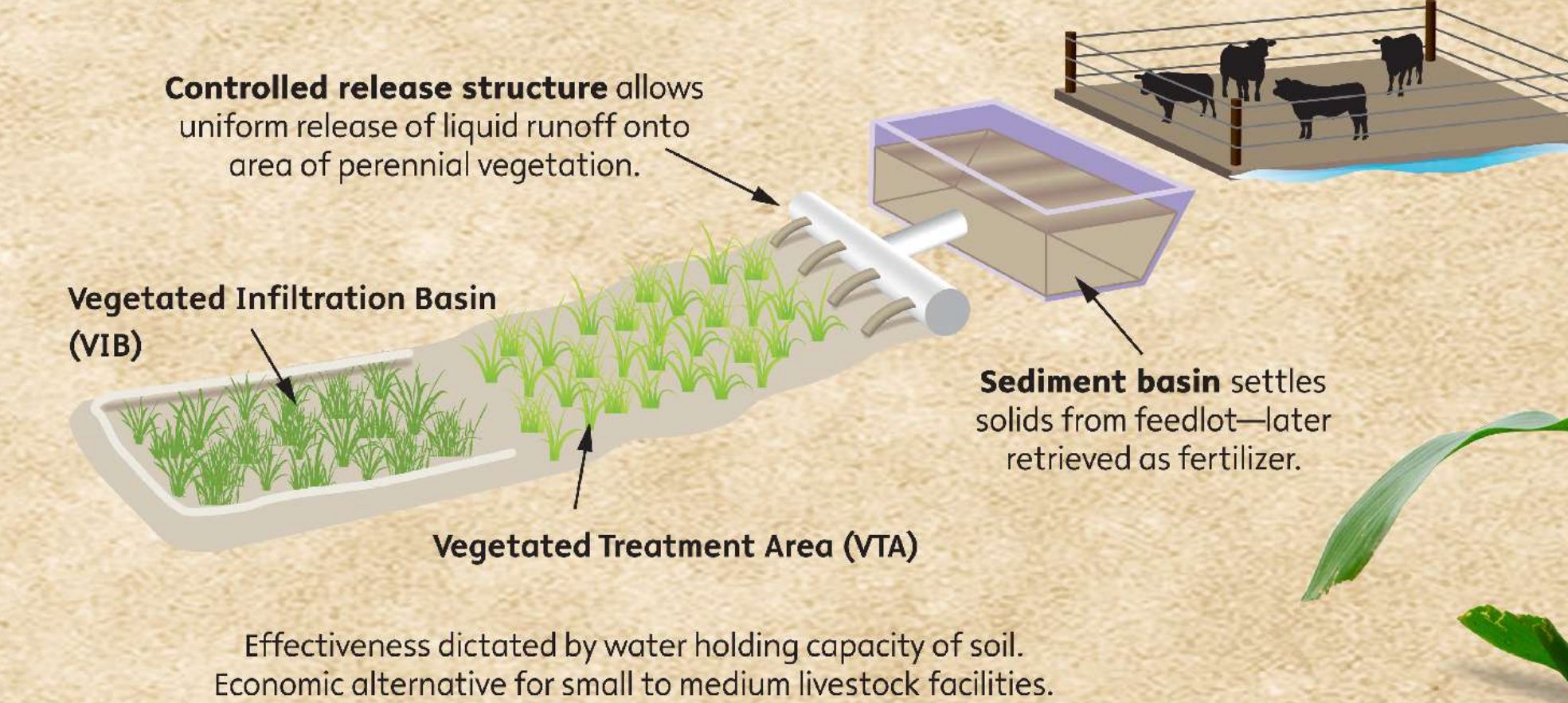
**Making sure manure doesn't go to waste.**

### Utilizing manure as a resource for crop production.

- Cost-effective in combination with commercial fertilizer
- Tools available to develop effective long-term manure utilization plans
- Recycling nutrients conserves natural resources
- Great source of N, P, micronutrients & organic matter
- Land application training provided by UNL extension



## Vegetative Treatment System



*The display reached a general agricultural audience, including FFA students and farmers, that may or may not have livestock. It also reached policy makers including the governor of Nebraska (above).*

*Participants were asked to “guess which has the most nutrient” (below). They were surprised at the nutrient content of the manure relative to the jars of corn, soybeans or fertilizer.*

**The above poster was accompanied by multiple interactive displays including a “guess which one has the most nutrient” display, iPad app demonstrations, and a Manure Jeopardy game.**

*The media was interested in learning more about the display (left).*

*Manure Jeopardy (right) quizzed the audience as they tried to answer manure related questions. While the majority of the questions were not difficult, some answers challenged the audience.*

*Jars containing soybeans, corn, fertilizer and two types of manure for the “guess which has the most nutrient” display (left). Jars were grouped to have similar nutrient content, though many guessed the fertilizer to have the most of a particular nutrient.*

Nutrient Management	Air & Climate	Conservation Stewardship
<u>100</u>	<u>100</u>	<u>100</u>
<u>250</u>	<u>250</u>	<u>250</u>
Nutrient Management and Climate for 400		<u>400</u>
		<u>500</u>

One way to reduce odor complaints when spreading manure.

### Find out...

- What is....
- ...inject or incorporate manure?
- ...spread when wind is blowing away from neighbors?
- ...notify neighbors before spreading manure?



Others involved during the display included: Aaron Nygren, Jill Heemstra, Jason Gross, Amy Schmidt, Terry Mader and Dee Griffin.

Stewardship poster developed by David and Associates under the guidance of Extension professionals working in areas related to environmental stewardship at the University of Nebraska – Lincoln.

